Abbett Avenue Bridge
Spanning the Whippany River at Abbett Avenue
Morristown
Morris County
New Jersey

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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
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HISTORIC AMERICAN ENGINEERING RECORD

ABBETT AVENUE BRIDGE

NJ-35

Date: 1896

Location: Spanning the Whippany River at Abbett Avenue in Morristown, Morris County, Iowa.

Designer: Unknown, bridge demolished c. 1978.

Owner: County of Morris

Significance: The Abbett Avenue Bridge is a late 19th Cnetury (1896) single span pin connected Pratt pony truss. It is a representative example of 19th Century bridge construction. The bridge was originally constructed in 1896 and the road deck was reconstructed in 1941. It was a two-lane structure traversing the Whippany River which was accessable to both pedestrian and vehicular traffic. It was 73 feet long, 35 feet wide, and had a side walk on each side.

Transmitted By: Gary R. Arabak, 1983.

The Abbett Avenue Bridge is a simple beam truss bridge supported at each end, the trusses being of a "pony" type. The roadway passes between the trusses, as in a "through truss" type bridge, but there is no lateral bracing between the top chords. The steel deck of the bridge is supported by twelve 10" x 5¾" (steel I-beams) stringers spanning across four 24" deep floor beams. The two trusses span the river from abutment to abutment giving support to the floor beams. The top chords and verticals of the trusses comprise of built up steel members that are joined to the diagonal and bottom chord tension members by pin connections. The original diagonal eyebars have been, in part, supplemented by newer members welded on the plates that are also joined to the pin connections.

The original (1896) steel structural members included the trusses and floor beams. Wood structural members included oak timber stringers, sidewalk beams and deck, and iron pipe sidewalk railing. The abutments were coursed, broken bond, broken range stone. The original material of the bridge deck is believed to have been wood, but no records of this exist. In 1941, a new road deck including steel sub-deck and bituminous paving cover was installed. Steel I-beams replaced wood stringers. In 1964, a new corrugated steel sub-deck and bituminous cover was installed.

The bridge is 73' - 0" long, 35' - 0" wide and has a sidewalk on each side (wood walking deck and steel curb). The dates 1896 (original construction) and 1941 (road deck reconstruction) and number 120 (County bridge number) are inscribed on the east side top chord of the truss. The bridge is a two-lane structure traversing the Whippany River. It is accessible to both pedestrian and vehicular traffic, with a posted ten ton weight limit.

As to be expected, the steel structure and stone abutments are well weathered from decades of exposure, but the bridge retains much of its historical significance concerning bridge design in the late 1800's. Warping of the pedestrian railings is apparent, but this is not a major deformation. The bituminous road and timber walkways are in good condition. The physical capacity has been reduced several times. Among the existing intrusions affecting the bridge include telephone electric cables that traverse above the entire span. However, no physical contact is made between the bridge itself and the cables or line poles. There also are four obstructive traffic signs (railroad crossing and towage caution) on or near the structure.

The terrain along the Whippany River is heavily treed and vegetated with a variety of sizes and species. The banks directly under the bridge are littered at each abutment, but in the bridge vicinity, its banks and waters are relatively litter-free. The conditon under the bridge can be attributed to shallow water surrounding the abutments, resulting in the gradual accumulation of debris. The boating volume on the waterway in this area is limited due to the shallow and rocky riverbed, and there exists a small vessel clearance condition under the bridge. Erie Lackawanna Railroad tracks run parallel to the Whippany River and come within 30 feet of the bridge on the southern bank. Residential and commercial development (gasoline and oil storage) flank the bridge on both sides along Abbett Avenue.

Beginning in 1850, up to the turn of the Century, the American bridge industry was in a period of transition. Cast iron bridges were common through 1880, and the use of rolled wrought iron plates, bars, and shapes for trusses did not terminate until the early 1900's. Because of economic consideration, steel bridge work was being introduced rapidly into American practice in the late 19th Century, and many bridges of this period were constructed of two or more structural materials.

The Abbett Avenue Bridge is a structure typical of this time, with structural materials including steel (floor beams, girders), wood (stringers, decking, walkway floor beams), wrought iron (truss pins and plates). The only major change to the bridge has been the replacement of the timber stringers with steel I-beams and the welding on of supplementary diagonals. The stone abutment construction (which predated iron and concrete substructures) was another common technique of this period.